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TRANSFER OF INTERACTIVE REPORT EXTRACTED DATA (TIRED) REQUIREMENTS SPECIFICATION

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Job Order 71-983

AD 63-0997-1983-02

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Contract NAS 9-12200
For
EARTH OBSERVATIONS DIVISION

National Aeronautics and Space Administration
LYNDON B. JOHNSON SPACE CENTER
Houston, Texas
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TRANSFER OF INTERACTIVE REPORT EXTRACTED DATA (TIRED) REQUIREMENTS SPECIFICATION

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1. SCOPE

This specification establishes the requirements for performance, design, test and qualification of a computer program identified as Transfer of Interactive Report Extracted Data (TIRED), which will be an additional program (0016) within the CAS BATCH System. TIRED is used to provide the CAS BATCH REPORT GENERATOR capability the necessary data as produced for the CAS Interactive Aggregation data base to generate the four IE reports. This specification requires a computer program be generated to achieve this objective.

This requirement was initiated by JSC/TF12.

2. APPLICABLE DOCUMENTS

The following documents, of the exact issue noted, constitutes a part of this specification to the extent specified herein. Where conflicting requirements exist, the requirements for this specification shall govern.

Action Document	63-0997-1983-02
Job Order No.	71-983
Contract No.	NAS 9-12200
TIRF No.	76-0035

JSC 10009, Appendix E-3
CAS BATCH SYSTEM Results Extract Program (Program 0005)

3. REQUIREMENTS

3.1 SYSTEM DEFINITION

The CAS BATCH SYSTEM is operational on the PDP 11/45 computer facility in Bldg. 17 of NASA JSC and currently runs under the

RSX-11D operating system.

3.2 DESIGN REQUIREMENTS

Design, programming, implementation, and documentation will be in accordance with the Bldg. 17 FCMO management standards and the specified Action Document.

3.3 PROCESSING DESCRIPTION

a. General Overview - The CAS Interactive System will be used for processing data and generating Applications Report Index Files (see LACIE CROP ASSESSMENT SUBSYSTEM SOFTWARE DOCUMENT, JSC 10009, Appendix E.3). These report index files will be made available to the CAS BATCH SYSTEM via a transfer program. The transfer program (TIRED) will select and reformat all available data required as input to the CAS BATCH EXTRACT PROGRAM (see LACIE BATCH SYSTEM PROGRAM, RESULTS EXTRACT PROGRAM # 0005).

b. Input File Processing

1. CAS Analyst Supplied Data - The first series of inputs processed will consist of data input by the using CAS analyst. This data will be composed of the type of data to be processed (Spring, Winter, Total), the evaluation code(s) used in the aggregation, the acquisition start and stop dates, the sub-classes used, the prescribed Bio Window order and the weather data range dates. These inputs will be processed tutorially with the user not being allowed to proceed to the next step until legal data has been supplied to the current step.

2. The Lower Confidence Limit value in the report file(s) will be interrogated and if found to be negative, a zero (Ø) value will be transferred in place of the negative value.

3. With the exception of the validation processing mentioned in (1) and (2) above, no additional data validation or data content checks on accessed data will be performed.

4. The CAS Interactive System report files (see attachment 1) to be accessed are:

ARIF.FC	Applications Report Index File
ARESPR.FC	Area Spring Report File
AREWIN.FC	Area Winter Report File
ARETOT.FC	Area Total Report File
YLDSPR.FC	Yield Spring Report File
YLDWIN.FC	Yield Winter Report File
PROSPR.FC	Production Spring Report File
PROWIN.FC	Production Winter Report File
PROTOT.FC	Production Total Report File

ALOCAT.CY.FC

Where: FC=country FIPS code

(a) Concepts on Data Representation:

- o AIRF.FC: contains all necessary index tables establishing a base for retrieving data records from other report files.
- o ALOCATE.CY:FC: contains the number of zones, region, strata, and substrata to be processed.
- o All other files: Each file contains the following ten basic data items;
  - Region ID
  - Zone ID
  - Strata ID
  - Substrata ID

Estimates of:
- **Area**
- **Yield**
- **Production**

Lower Confidence Limit
Upper Confidence Limit
Standard Error
Coefficient of Variation
Probability of 10% error

c. Output File Processing - The CAS BATCH SYSTEM output record (see attachment 2) will be generated in the following manner:

BATCH RECORD ELEMENT NAME	TRANSFER FROM	INTERACTIVE RECORD ELEMENT NAME
CONTROL KEY		
Country Code	ARIF FILE	Country Code
Region Code	Report File	Region Code (I,J,K,L)
Zone Code	Report File	Zone Code (I,J,K,L)
Strata Code	Report File	Strata Code (I,J,K,L)
AREA REPORT FILE(S)		
Area Estimate	Report File	Area Estimate (I,J,K,L)
Probability of ≤10% Error	Report File	Probability of ≤10% Error (I,J,K,L)
Coefficient of Variation	Report File	Coefficient of Variation (I,J,K,L)
Upper Confidence Limit	Report File	Upper Confidence Limit (I,J,K,L)
Lower Confidence Limit	Report File	Lower Confidence Limit (I,J,K,L)

No. of Segments Allocated	Report File	Country - sum all segments in Country Region - sum all segments in Region Zone - sum all segments in Zone Strata - number of segments allocated (I,J,K,L)
No. of Segments Used	Report File	Country - sum all segments used in country Region - sum all segments used in Region Zone - sum all segments used in Zone Strata - no. of segment ID's (I,J,K,L)
No. of Strata Used	Report File	Country - sum all strata in Country Region - sum all strata in Region Zone - sum all strata in Zone Strata - insert a constant of one (1)

YIELD REPORT FILES(S)

Production Estimate	Report File	Production Estimate (I,J,K,L)
Standard Error	Report File	Standard Deviation (I,J,K,L)
Probability of ≤10% Error	Report File	Probability of ≤10% Error (I,J,K,L)
Coefficient of Variation	Report File	Coefficient of Variation (I,J,K,L)
Upper Confidence Limit	Report File	Upper Confidence Limit (I,J,K,L)
Lower Confidence Limit	Report File	Lower Confidence Limit (I,J,K,L)

Where: I = country ID
J = region ID
K = zone ID
L = strata ID

4. QUALITY ASSURANCE PROVISIONS

Verification of the performance of the software specified herein shall be demonstrated by an acceptance test plan.

5. DOCUMENTATION

Documentation will consist of this Requirements Specification, as Acceptance Test Procedure, and a well annotated program listing to be delivered upon implementation.

KEY PUNCH TRANSMITTAL

Page ___ of ___ pages

THE RECORD LAYOUT FOR ALL RECORDS IN THE INTERACTIVE AGGREGATION FILES

THE FILES AND THE LEVELS WITHIN EACH FILE ARE BELOW

ID	ID	ID	ID	ESTIMATE	LOWER CONF. LIMIT	UPPER CONF. LIMIT	STND DEV.	COEF. OF VARIAT.	PROB OF 10% ERR	ADDITIONAL DATA FROM SUBSTRATA RECORDS OF ALL 3 AREA FILES	30	RECORDS	AGR SIT.	STRATA

FILES 1) ARESPR 2) AREWIN 3) ARETOT 4) YLDSPR 5) YLDWIN 6) PROSPR 7) PROWIN 8) PROTOT

LEVELS	1) ARESPR	2) AREWIN	3) ARETOT	4) YLDSPR	5) YLDWIN	6) PROSPR	7) PROWIN	8) PROTOT
	a) REGION	a) REGION	a) REGION	a) REGION	a) REGION	a) REGION	a) REGION	a) REGION
	b) ZONE	b) ZONE	b) ZONE	b) ZONE	b) ZONE	b) ZONE	b) ZONE	b) ZONE
	c) STRATA	c) STRATA	c) STRATA	c) STRATA	c) STRATA	c) STRATA	c) STRATA	c) STRATA
	d) SUBSTRAT	d) SUBSTRATA	d) SUBSTRATA					

ESTIMATE FOR AREA, YIELD, AND PRODUCTION

IN ADDITION TO ABOVE RECORD, THE WEATHER DATA RANGE IS NEEDED FOR THE TWO YIELD FILES

ISC Form 412 (Rev Sep 67)

ATTACHMENT 1

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LACIE

CAS BATCH SYSTEM

RESULTS EXTRACT PROGRAM

1/20/76

ATTACHMENT 2

8.

CORE RECORD LAYOUT

1	2	3	4	5	6	7	8	9
A2	I2	I2	I2	F11.0	F10.0	F4.2	F4.2	F11.0
CTRY CODE	REG CODE	ZONE CODE	STRATA CODE	AREA ESTIMATE	STANDARD ERROR	PROB OF ≤ 10% ERROR	COEF OF VAR	UPPER CONFIDENCE LIMIT

10	11	12	13	14	15	16	17	18	19
F11.0	I4	I4	I4	E5.1	E5.1	F4.2	F4.2	E5.1	E5.1
LOWER CONFIDENCE LIMIT	# OF SEG ALLOC	# OF SEG USED	# OF STRATA USED	YIELD ESTIMATE	STDAD ERROR	PROB OF ≤ 10% ERROR	COEF OF VAR	UPPER CONF LIMIT	

20	21	22	23	24	25
LOWER CONF LIMIT	H12	F11.0	F10.0	F4.2	F4.2	F11.0
	START M M Y Y / STOP M M Y Y	PRODUCTION ESTIMATE	STANDARD ERROR	PROB OF ≤ 10% ERROR	COEF OF VAR	UPPER CONF LIMIT

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LOWER CONF LIMIT

DS NAME: 00004IAGG.DAT

RECORD ID: RESULTS RECORD

DENSITY N/A BPI

INPUT

CHECKPOINT: OUTPUT X

YES NO X

SEE PARAGRAPH:

CHARACTERISTIC CODES ▶

C - character, 8-bit code
X - hexadecimal, 4-bit code
B - binary
F - fixed-point, full word
H - fixed-point, halfword
E - floating-point, full word
D - floating-point, double word
P - packed decimal
Z - zoned decimal
A - address value, full word
Y - address value, halfword
V - address, external symbol
S - address, base displacement